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FIG . 1

Replacement Sheet
Appl. No.: 09/216,206 **Inventor:** David W. Roth et al. **For:** System and method for real-time bidding for Internet advertising space
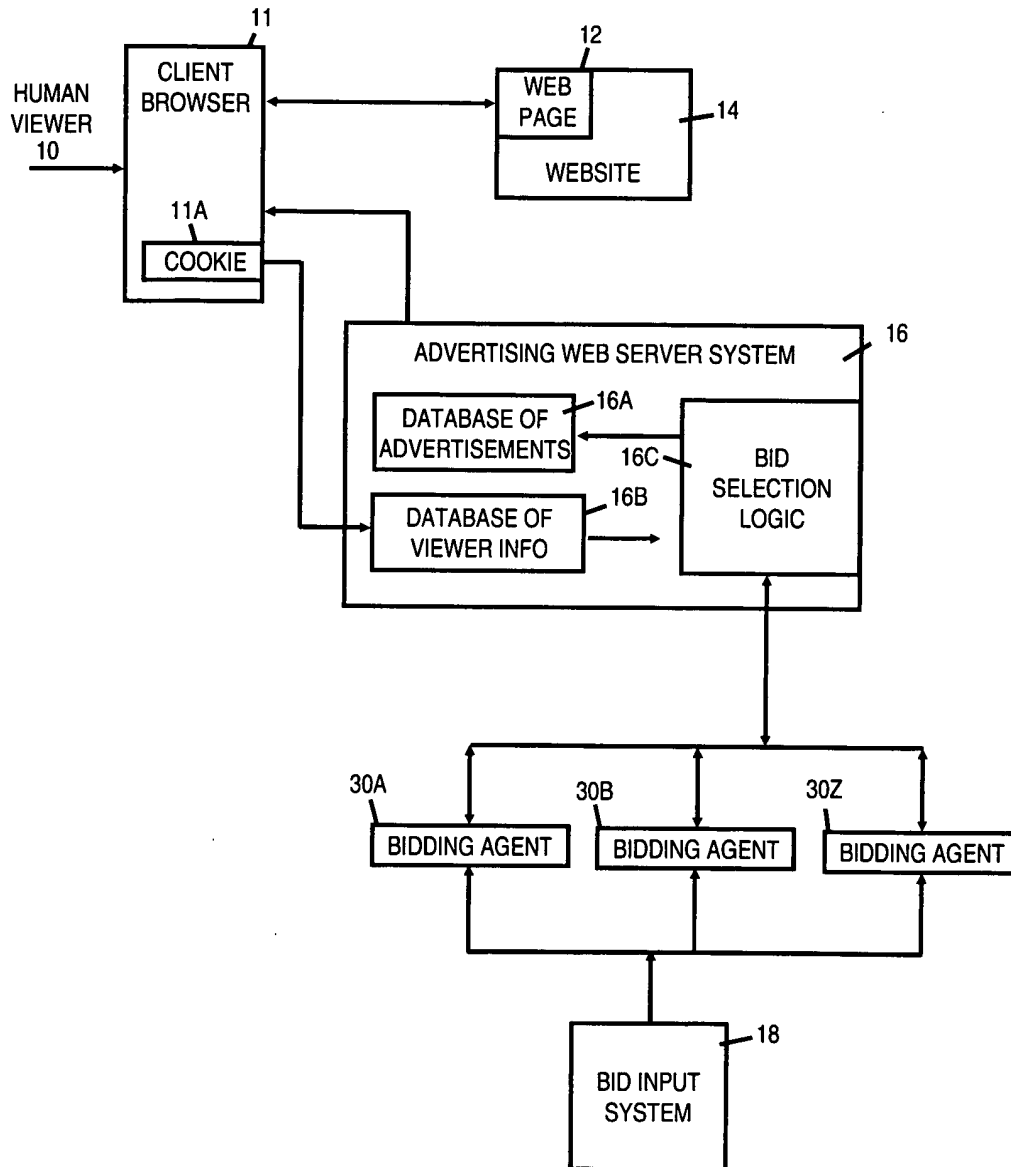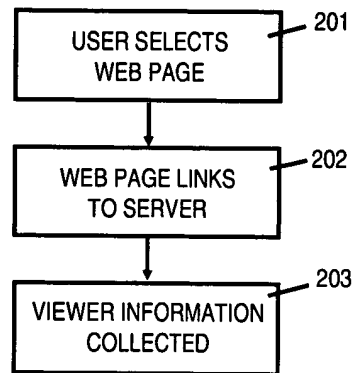
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USER SELECTS
WEB PAGE — 201

↓

WEB PAGE LINKS
TO SERVER — 202

↓

VIEWER INFORMATION
COLLECTED — 203

FIG . 2A

ADVERTISING SPACE BECOMES
AVAILABLE ON A WEB PAGE
(IN REA-TIME) — 210

↓

WEB SERVER SYSTEM 16
SENDS VIEW-OP
INFORMATION TO BIDDING AGENTS
(IN REAL-TIME) — 211 ← ADVERTISER SETS
PROPOSED BID WITH
PARAMETERS — 212

↓

BIDDING AGENTS SEND BIDS
TO BID SELECTION LOGIC — 213

↓

BID SELECTION LOGIC PICKS
WINNING BID — 214

↓

ADVERTISEMENT SENT TO
BROWSER 11 — 215

FIG . 2B

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```
┌──────────────┐                    ┌──────────────┐
│    CLIENT    │◄───────────────────│   WEB SITE   │ 14
│   BROWSER    │ 11                 └──────────────┘
└──────────────┘
       ▲
       │
       ▼
┌──────────────────┐  310
│   WEB SERVER     │              16
│                  │
│   ┌──────────┐   │
│   │ AD TABLES│   │ 16A
│   └──────────┘   │
└──────────────────┘
```

```
                320
┌─────────────────────────────────┐
│  VIEW SERVER                     │        POST VIEWOP ──►   ┌──────────────────┐ 30A
│              ┌─────────────┐     │◄──────────── BID ───────►│  BIDDING AGENT   │
│         16C  │     BID     │     │                          └──────────────────┘
│              │  SELECTION  │     │◄────────────────────────►┌──────────────────┐ 30B
│    16B       │    LOGIC    │     │                          │  BIDDING AGENT   │
│ ┌──────────┐ │             │     │                          └──────────────────┘
│ │   DATA   │ │             │     │◄────────────────────────►┌──────────────────┐ 30Z
│ │  TABLES  │ │             │     │                          │  BIDDING AGENT   │
│ └──────────┘ └─────────────┘     │                          └──────────────────┘
└─────────────────────────────────┘
       ▲                  ▲
       │                  │
       ▼                  │
┌──────────────┐          │      ┌─────────────────────┐
│   LOG AND    │ 320A     └──────│   BID INPUT         │ 18
│ BILLING UNIT │                 │   SERVER            │
└──────────────┘                 │  ┌──────────────┐   │
                                 │  │ DATA TABLE   │   │ 18-T
                                 │  └──────────────┘   │
                                 └─────────────────────┘
```
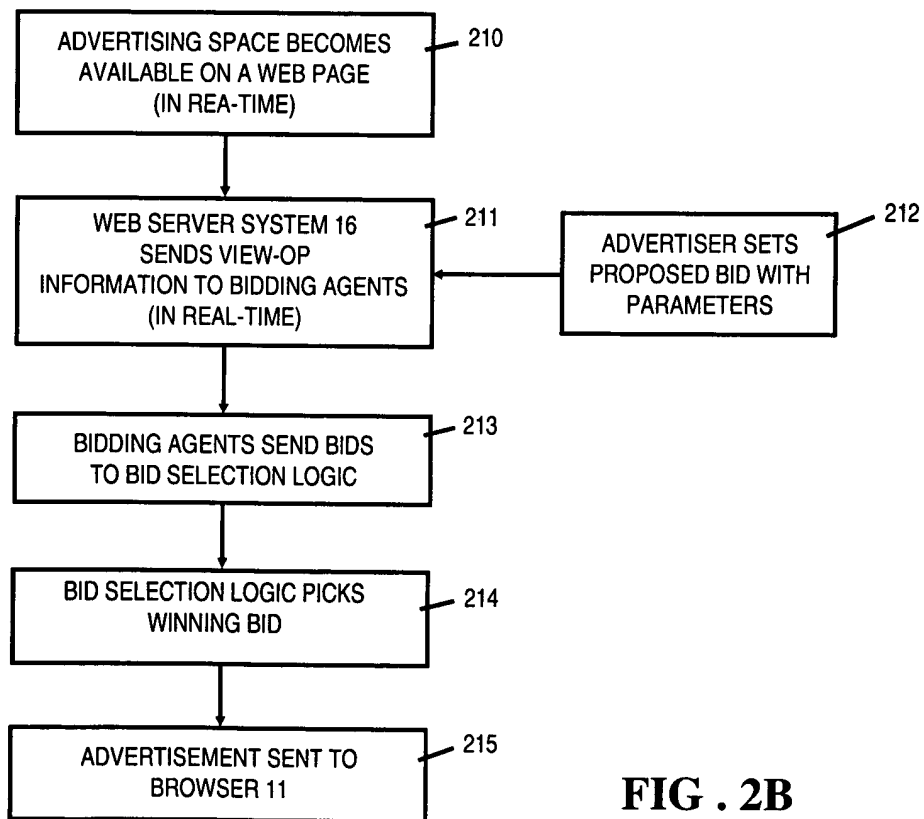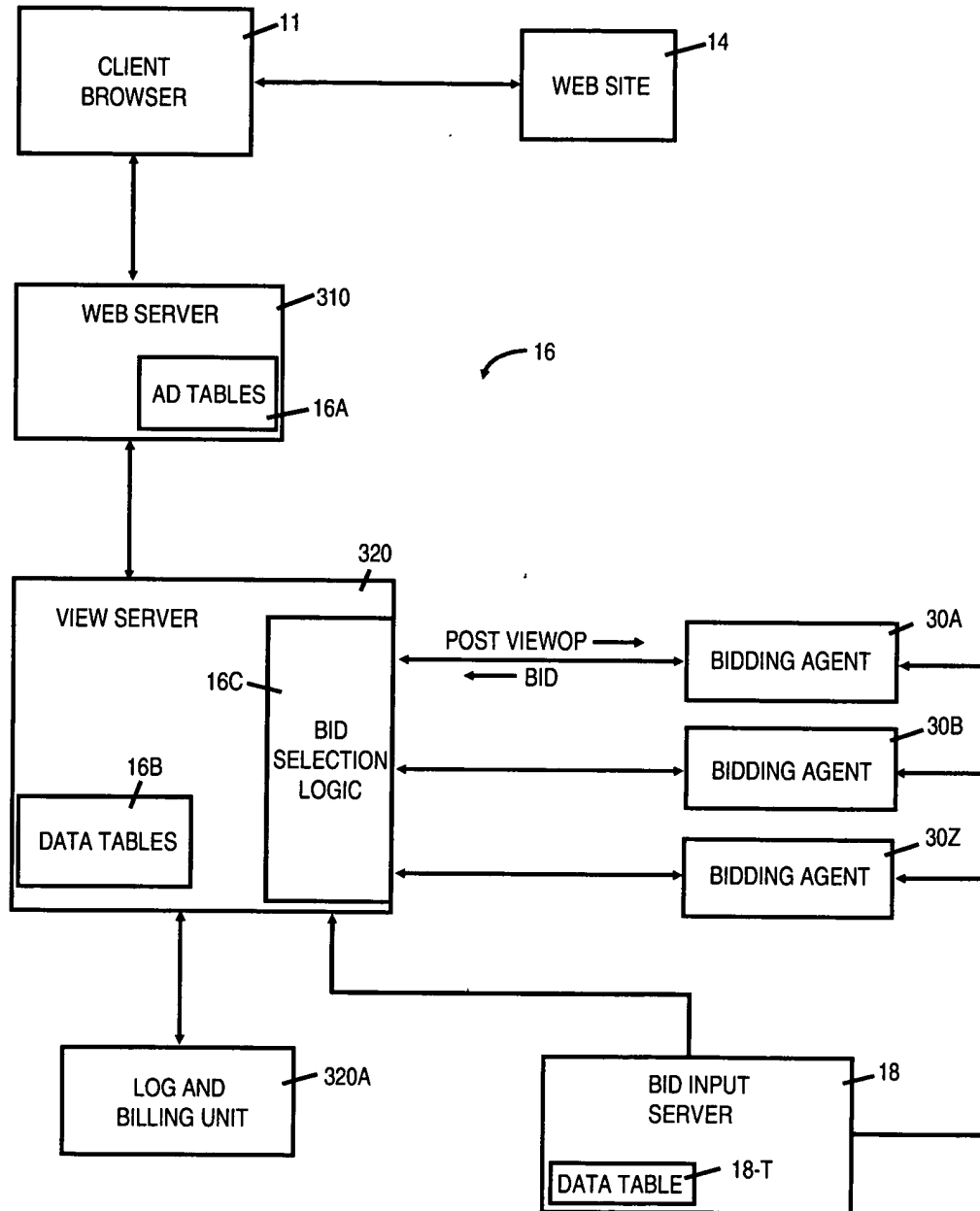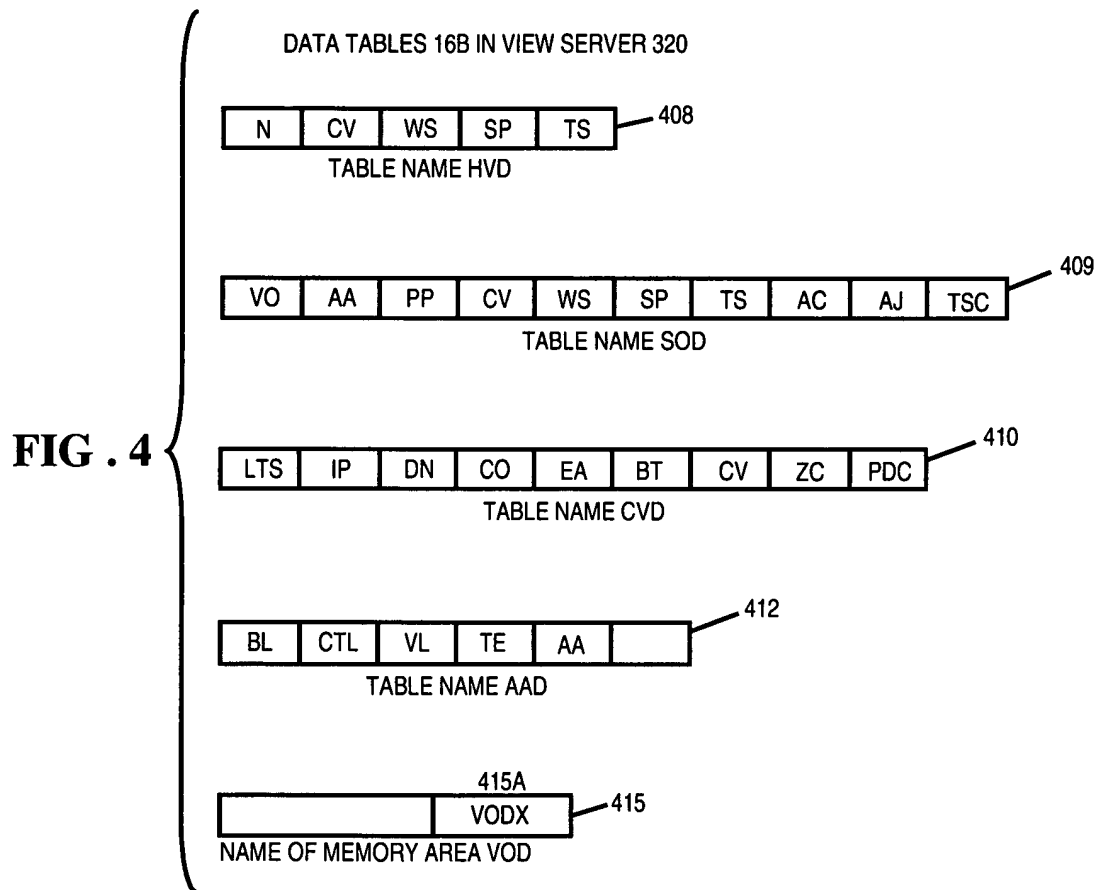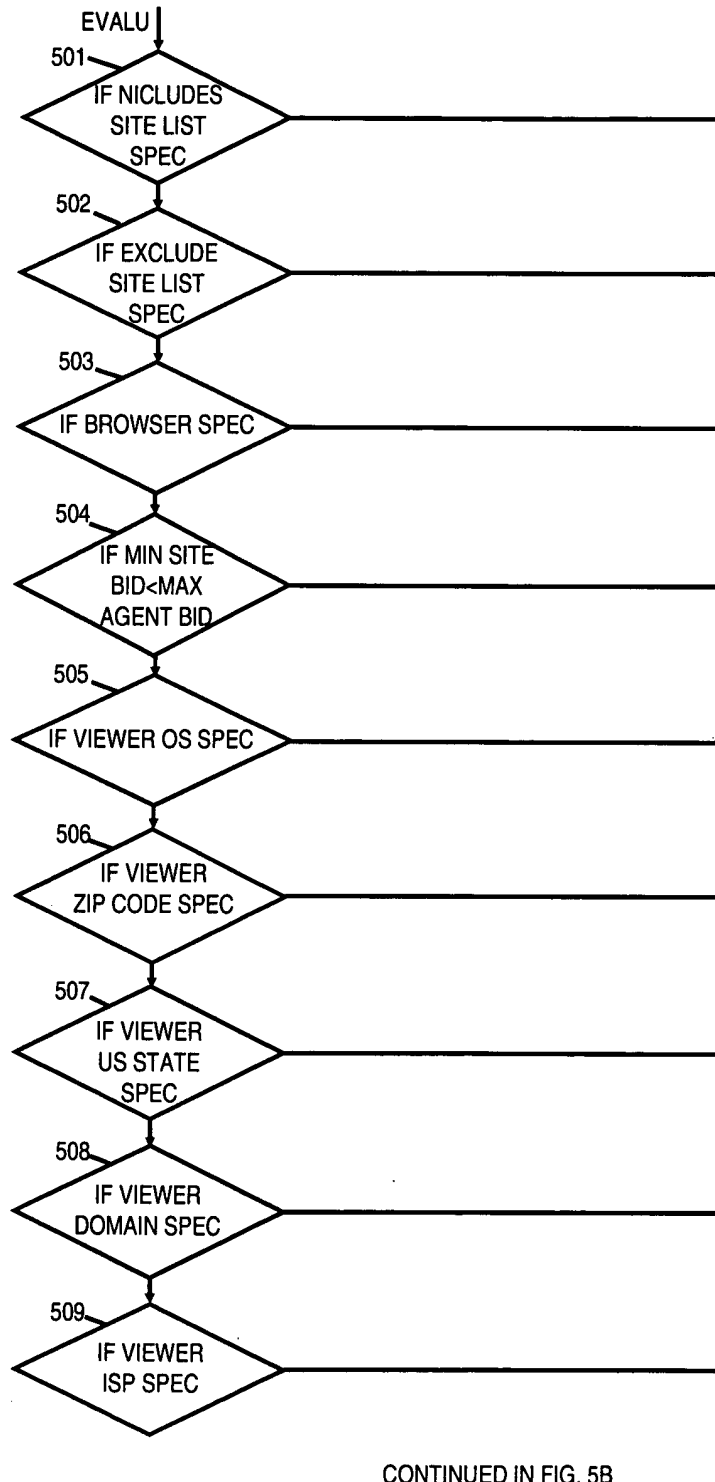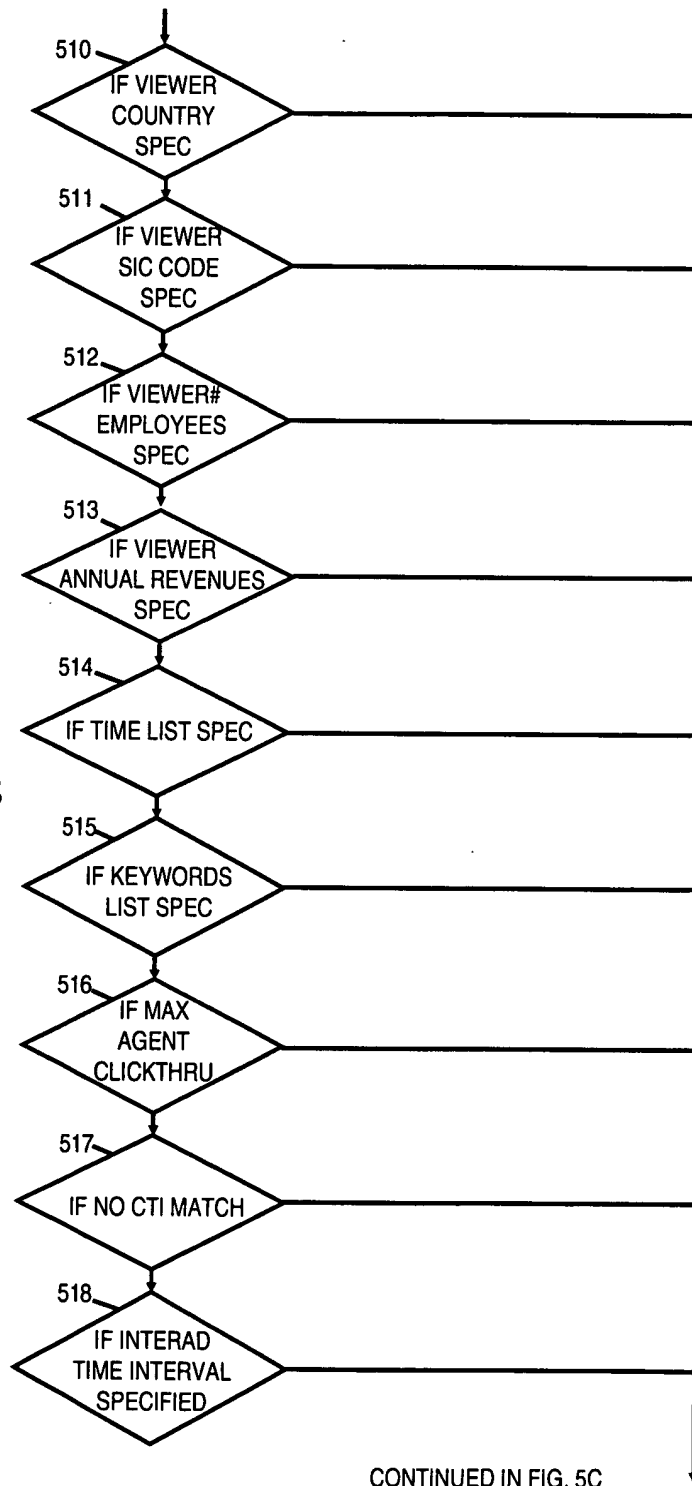
FIG . 3

Replacement Sheet
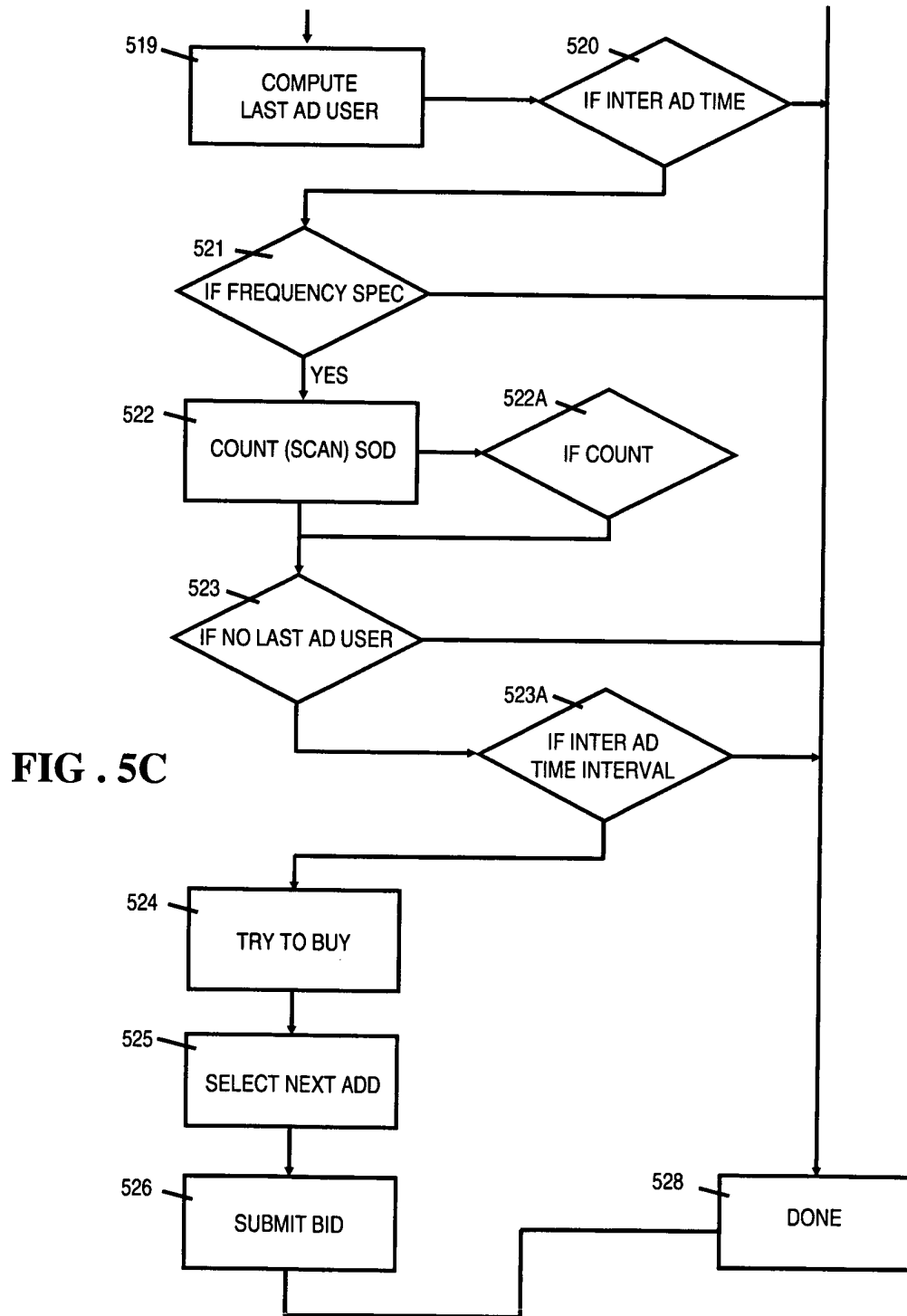**Appl. No.:** 09/216,206 **Inventor:** David W. Roth et al. **For:** System and method for real-time bidding for Internet advertising space

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DATA TABLES 16B IN VIEW SERVER 320

N	CV	WS	SP	TS	—408

TABLE NAME HVD

VO	AA	PP	CV	WS	SP	TS	AC	AJ	TSC	—409

TABLE NAME SOD

FIG . 4

LTS	IP	DN	CO	EA	BT	CV	ZC	PDC	—410

TABLE NAME CVD

BL	CTL	VL	TE	AA		—412

TABLE NAME AAD

415A

	VODX	—415

NAME OF MEMORY AREA VOD

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FIG . 5A

501 — IF NICLUDES SITE LIST SPEC

502 — IF EXCLUDE SITE LIST SPEC

503 — IF BROWSER SPEC

504 — IF MIN SITE BID<MAX AGENT BID

505 — IF VIEWER OS SPEC

506 — IF VIEWER ZIP CODE SPEC

507 — IF VIEWER US STATE SPEC

508 — IF VIEWER DOMAIN SPEC

509 — IF VIEWER ISP SPEC

EVALU

CONTINUED IN FIG. 5B

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FIG . 5B

510 — IF VIEWER COUNTRY SPEC

511 — IF VIEWER SIC CODE SPEC

512 — IF VIEWER# EMPLOYEES SPEC

513 — IF VIEWER ANNUAL REVENUES SPEC

514 — IF TIME LIST SPEC

515 — IF KEYWORDS LIST SPEC

516 — IF MAX AGENT CLICKTHRU

517 — IF NO CTI MATCH

518 — IF INTERAD TIME INTERVAL SPECIFIED
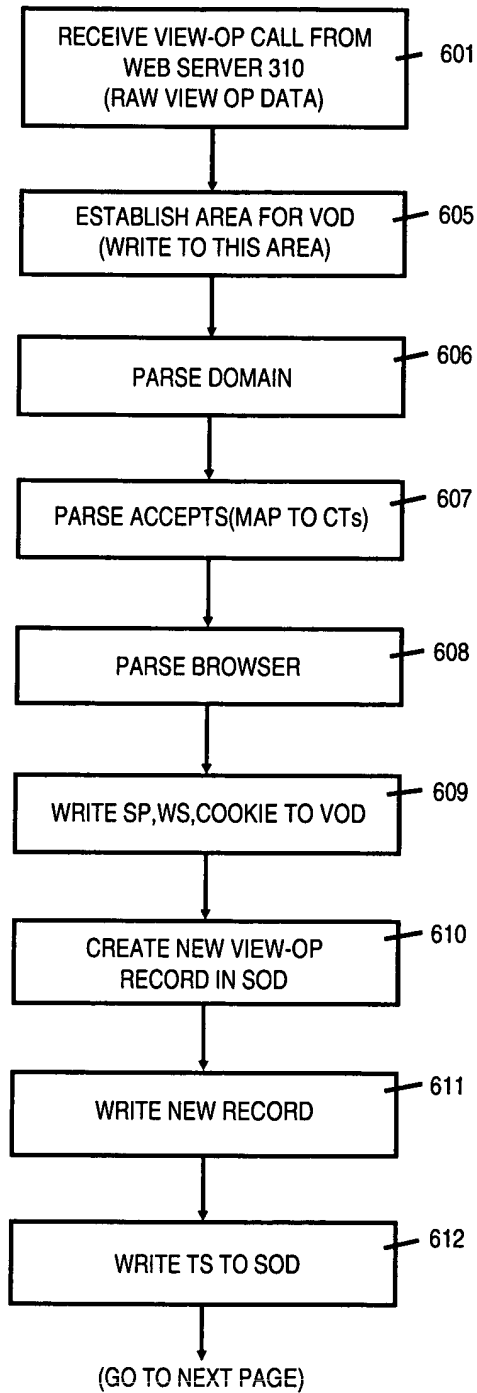
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FIG . 5C

Replacement Sheet
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PROCESS BEGINS WHEN WEB SERVER 310
PROVIDES A NEW VIEW-OP TO SERVER 320

```
RECEIVE VIEW-OP CALL FROM         601
WEB SERVER 310
(RAW VIEW OP DATA)

          ↓

ESTABLISH AREA FOR VOD            605
(WRITE TO THIS AREA)

          ↓

PARSE DOMAIN                      606

          ↓

PARSE ACCEPTS(MAP TO CTs)         607

          ↓

PARSE BROWSER                     608

          ↓

WRITE SP,WS,COOKIE TO VOD         609

          ↓

CREATE NEW VIEW-OP                610
RECORD IN SOD

          ↓

WRITE NEW RECORD                  611

          ↓

WRITE TS TO SOD                   612

          ↓
```

BEGIN OPERATION

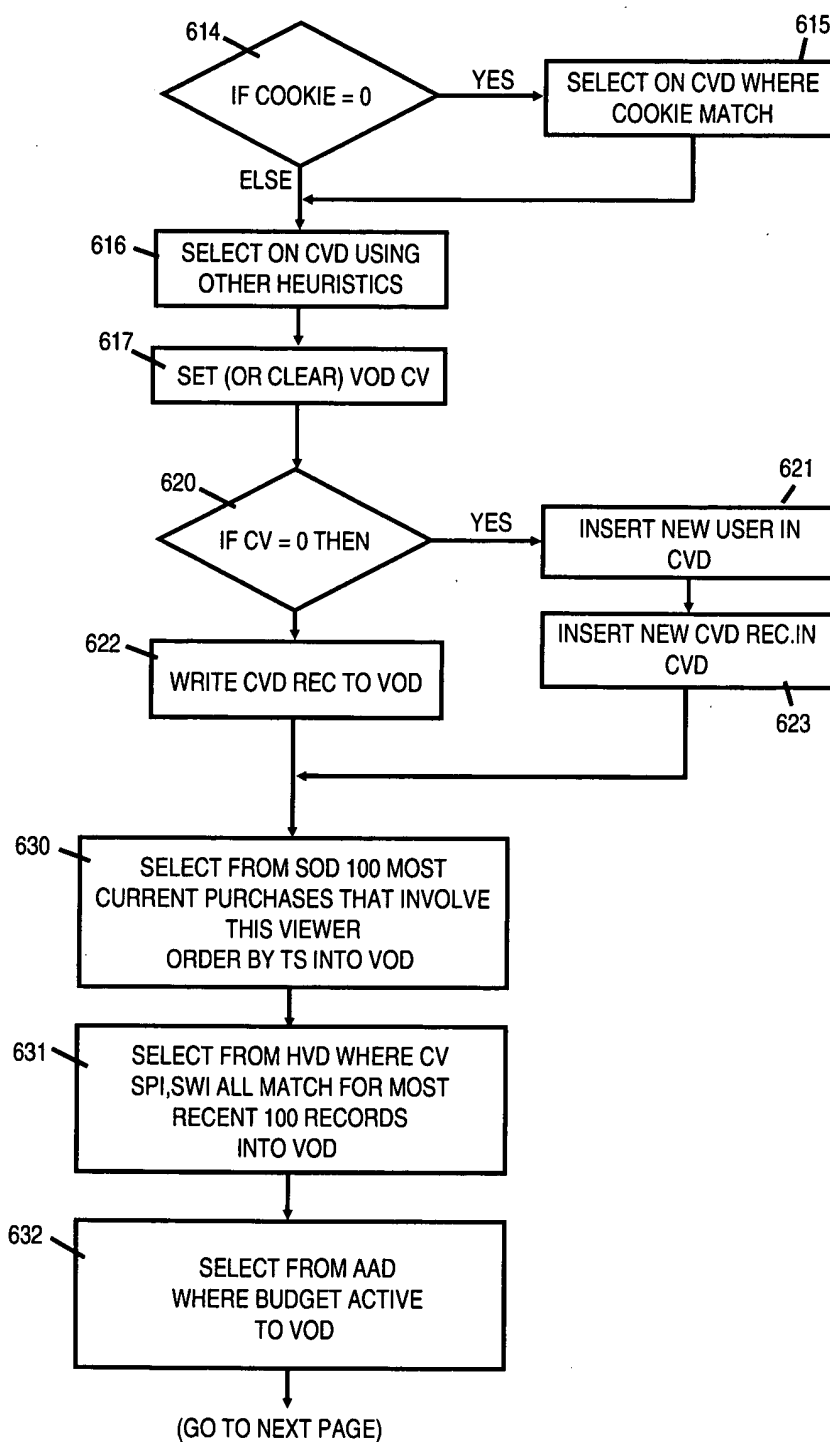# FIG . 6A

(GO TO NEXT PAGE)

Replacement Sheet
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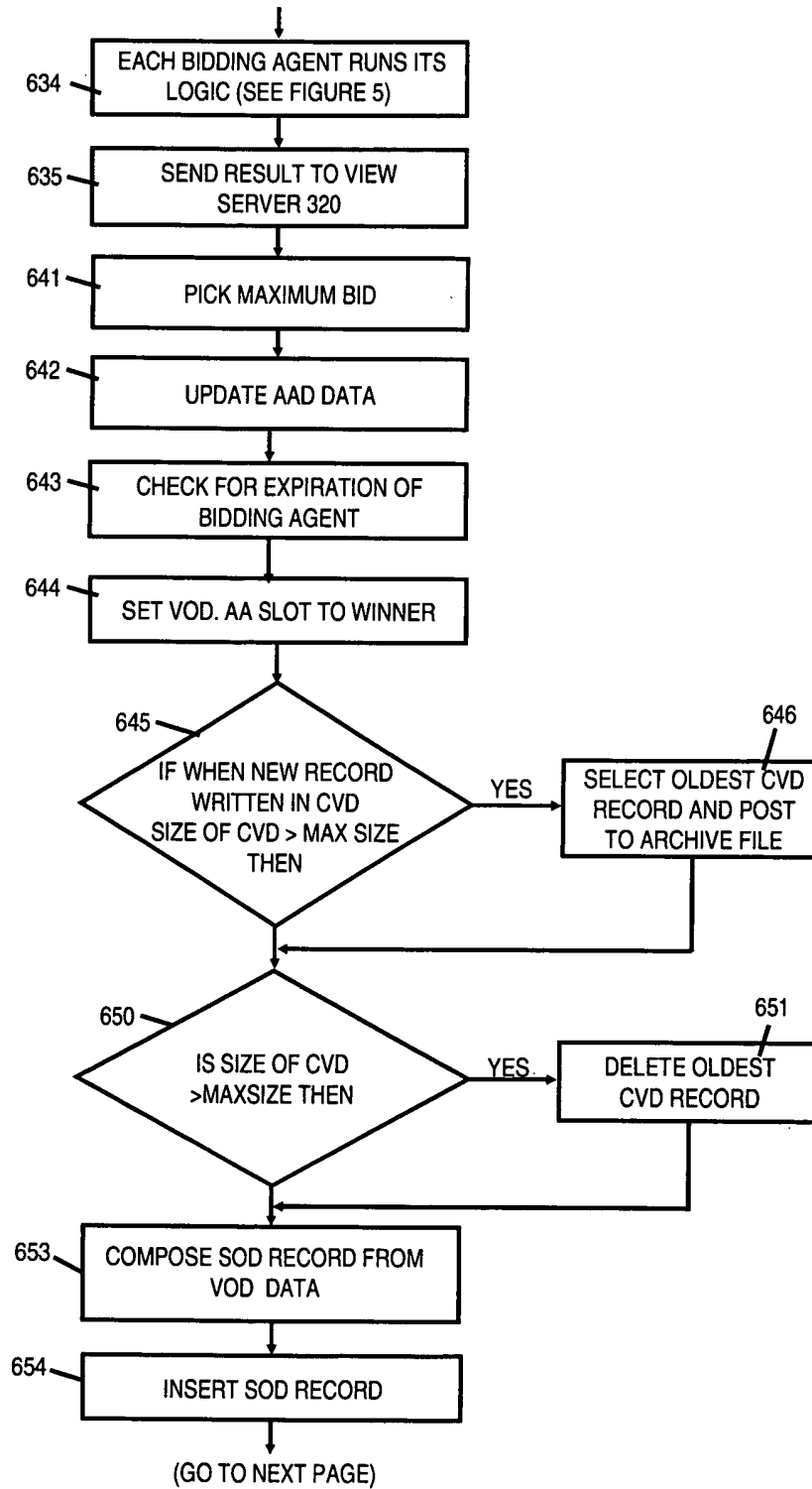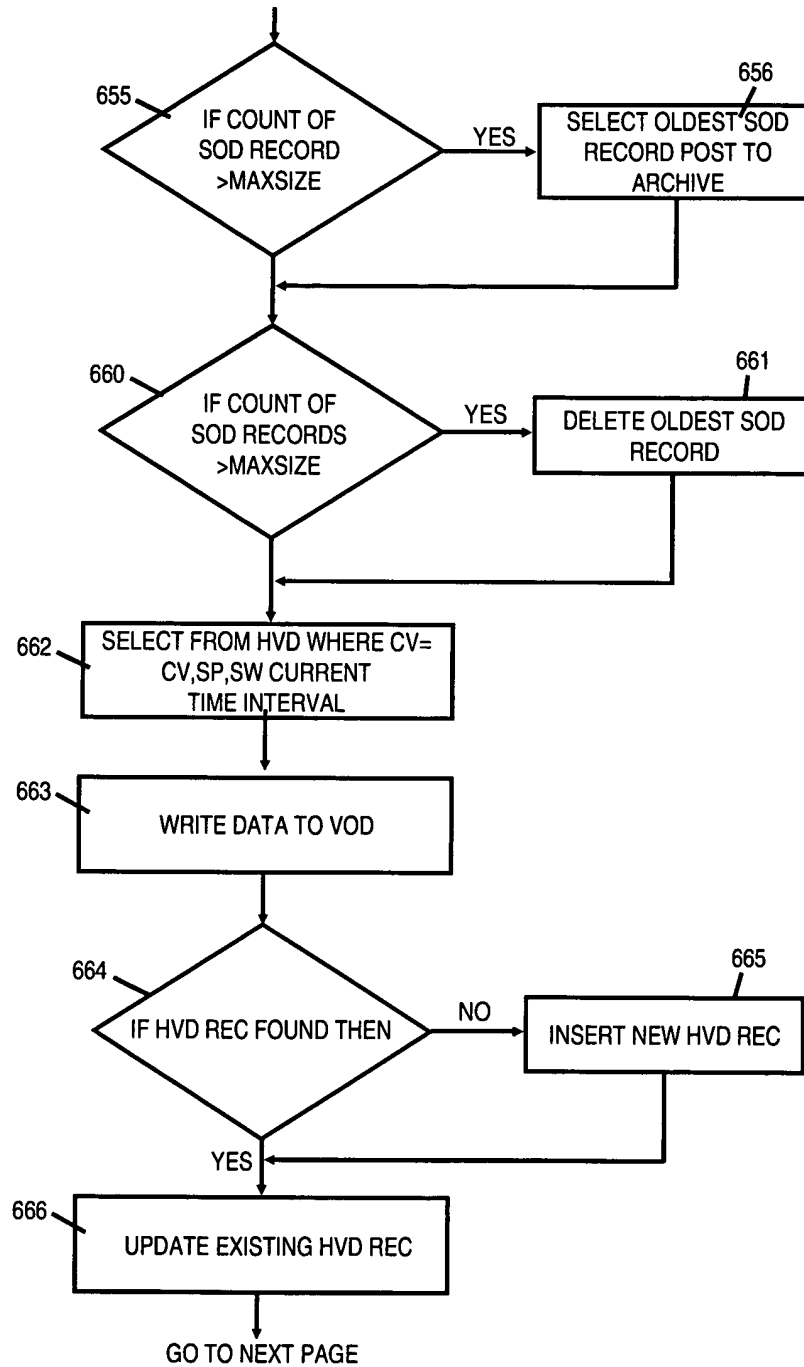
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614
IF COOKIE = 0 ── YES → 615 SELECT ON CVD WHERE COOKIE MATCH

ELSE

616 SELECT ON CVD USING OTHER HEURISTICS

617 SET (OR CLEAR) VOD CV

620
IF CV = 0 THEN ── YES → 621 INSERT NEW USER IN CVD

INSERT NEW CVD REC.IN CVD 623

622 WRITE CVD REC TO VOD

FIG . 6B

630 SELECT FROM SOD 100 MOST CURRENT PURCHASES THAT INVOLVE THIS VIEWER ORDER BY TS INTO VOD

631 SELECT FROM HVD WHERE CV SPI,SWI ALL MATCH FOR MOST RECENT 100 RECORDS INTO VOD

632 SELECT FROM AAD WHERE BUDGET ACTIVE TO VOD

(GO TO NEXT PAGE)

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634 — EACH BIDDING AGENT RUNS ITS LOGIC (SEE FIGURE 5)

635 — SEND RESULT TO VIEW SERVER 320

641 — PICK MAXIMUM BID

642 — UPDATE AAD DATA

643 — CHECK FOR EXPIRATION OF BIDDING AGENT

644 — SET VOD. AA SLOT TO WINNER

645 — IF WHEN NEW RECORD WRITTEN IN CVD SIZE OF CVD > MAX SIZE THEN

FIG . 6C

646 — SELECT OLDEST CVD RECORD AND POST TO ARCHIVE FILE — YES

650 — IS SIZE OF CVD >MAXSIZE THEN

651 — DELETE OLDEST CVD RECORD — YES

653 — COMPOSE SOD RECORD FROM VOD DATA

654 — INSERT SOD RECORD

(GO TO NEXT PAGE)

Replacement Sheet
Appl. No.: 09/216,206 **Inventor:** David W. Roth et al. **For:** System and method for real-time bidding for Internet advertising space
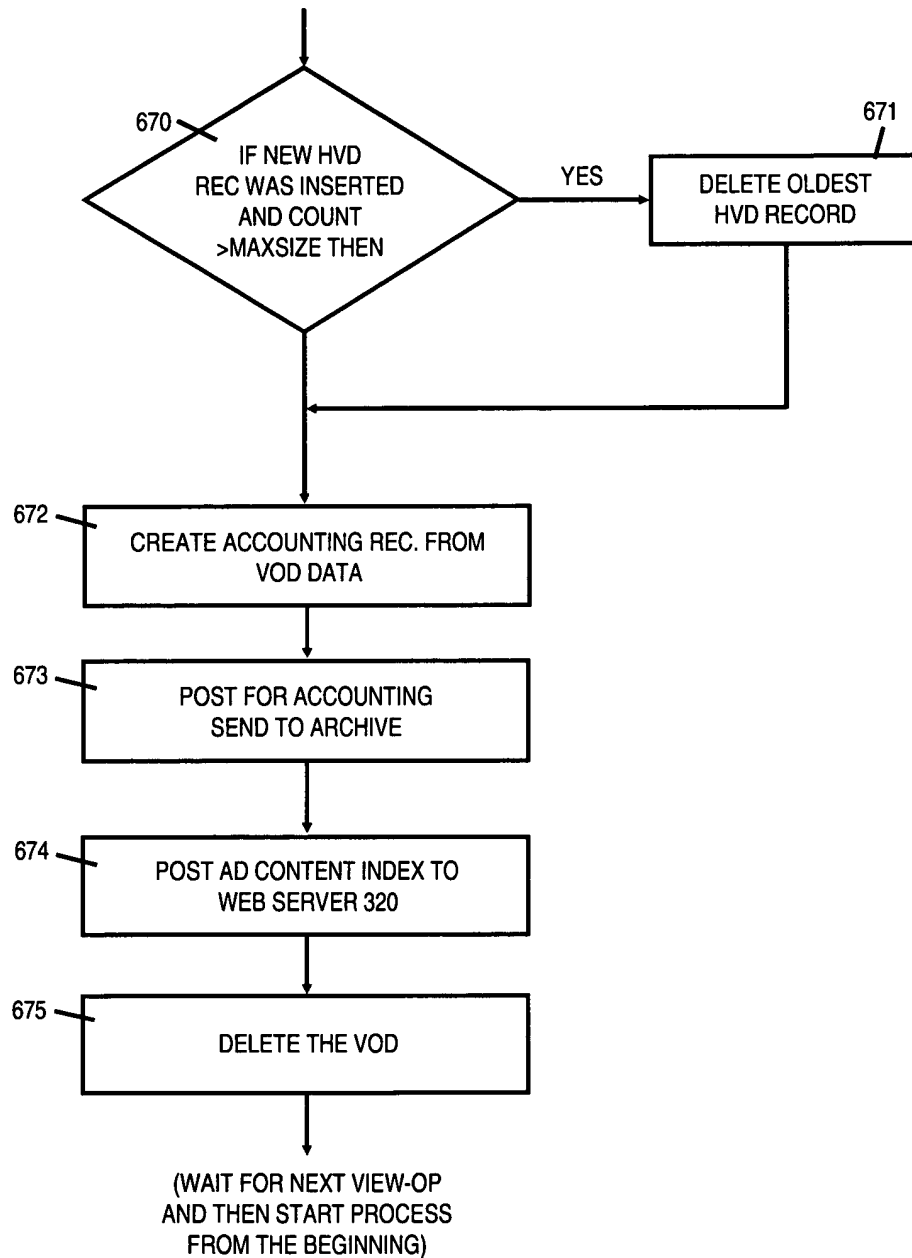
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655 — IF COUNT OF SOD RECORD >MAXSIZE

YES → 656 SELECT OLDEST SOD RECORD POST TO ARCHIVE

660 — IF COUNT OF SOD RECORDS >MAXSIZE

YES → 661 DELETE OLDEST SOD RECORD

662 — SELECT FROM HVD WHERE CV= CV,SP,SW CURRENT TIME INTERVAL

FIG . 6D

663 — WRITE DATA TO VOD

664 — IF HVD REC FOUND THEN

NO → 665 INSERT NEW HVD REC

YES

666 — UPDATE EXISTING HVD REC

GO TO NEXT PAGE

Replacement Sheet

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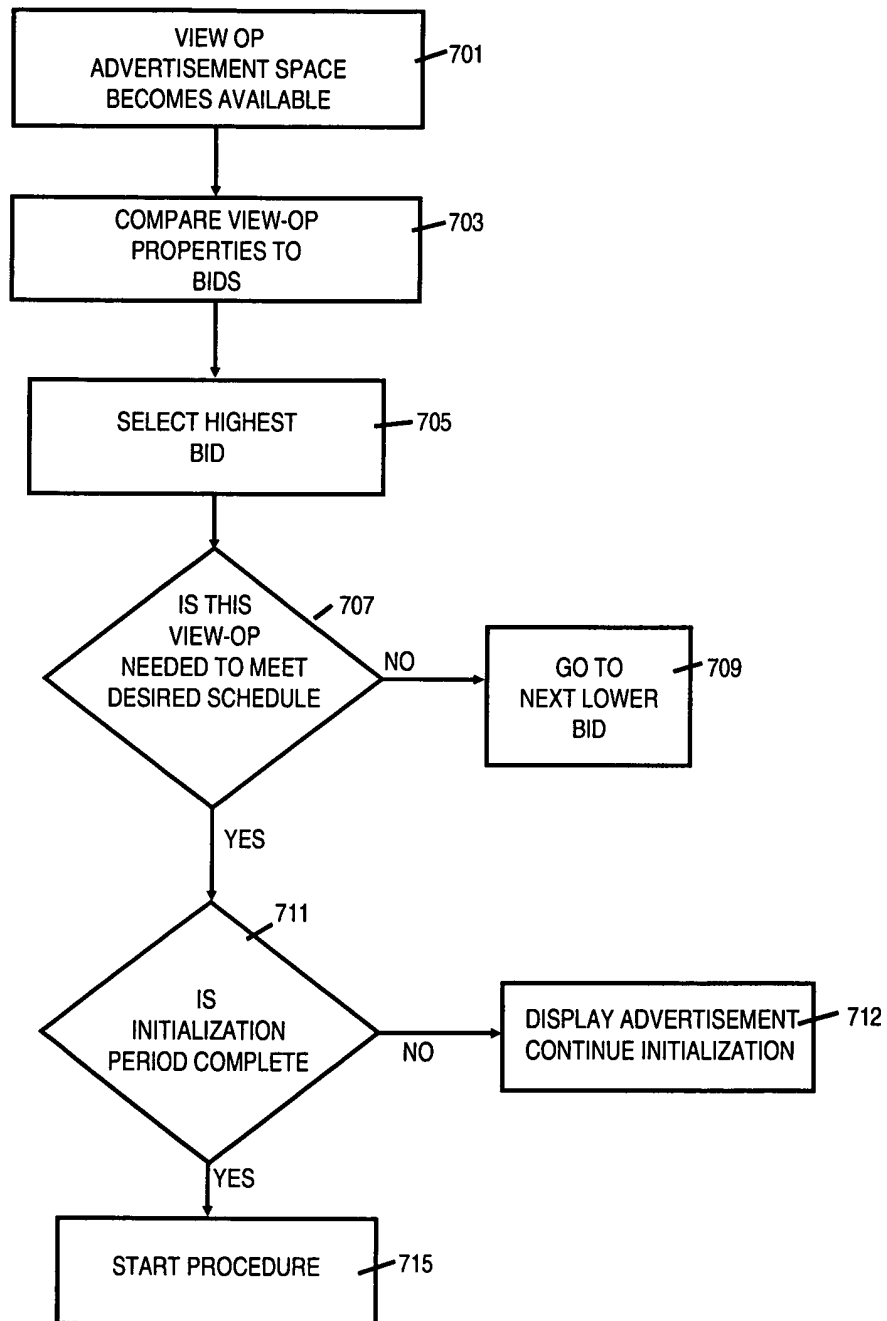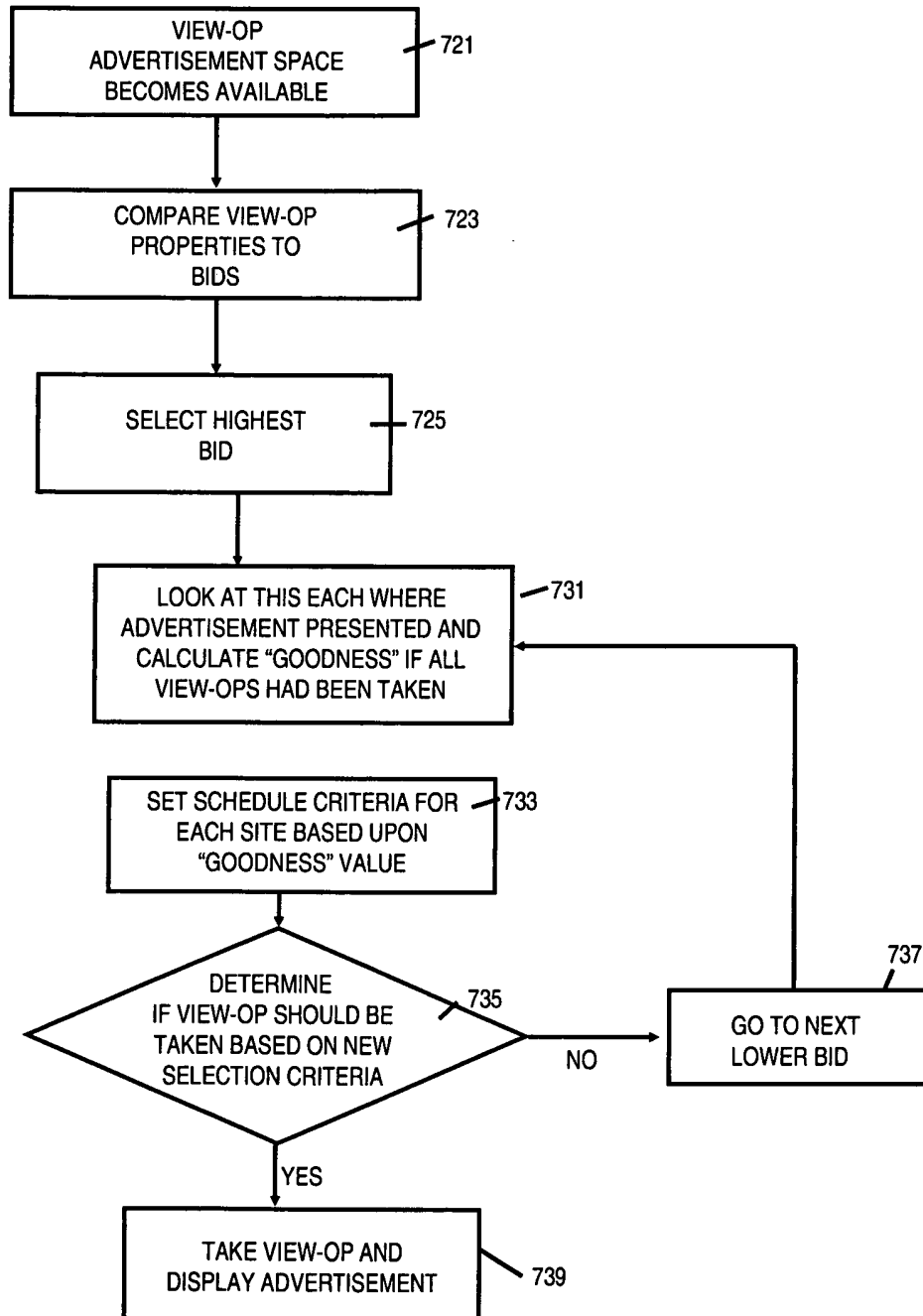
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670
IF NEW HVD
REC WAS INSERTED
AND COUNT
>MAXSIZE THEN

YES → 671
DELETE OLDEST
HVD RECORD

672
CREATE ACCOUNTING REC. FROM
VOD DATA

673
POST FOR ACCOUNTING
SEND TO ARCHIVE

674
POST AD CONTENT INDEX TO
WEB SERVER 320

675
DELETE THE VOD

(WAIT FOR NEXT VIEW-OP
AND THEN START PROCESS
FROM THE BEGINNING)

FIG . 6E

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FIG. 7A (INITIALIZATION PERIOD)

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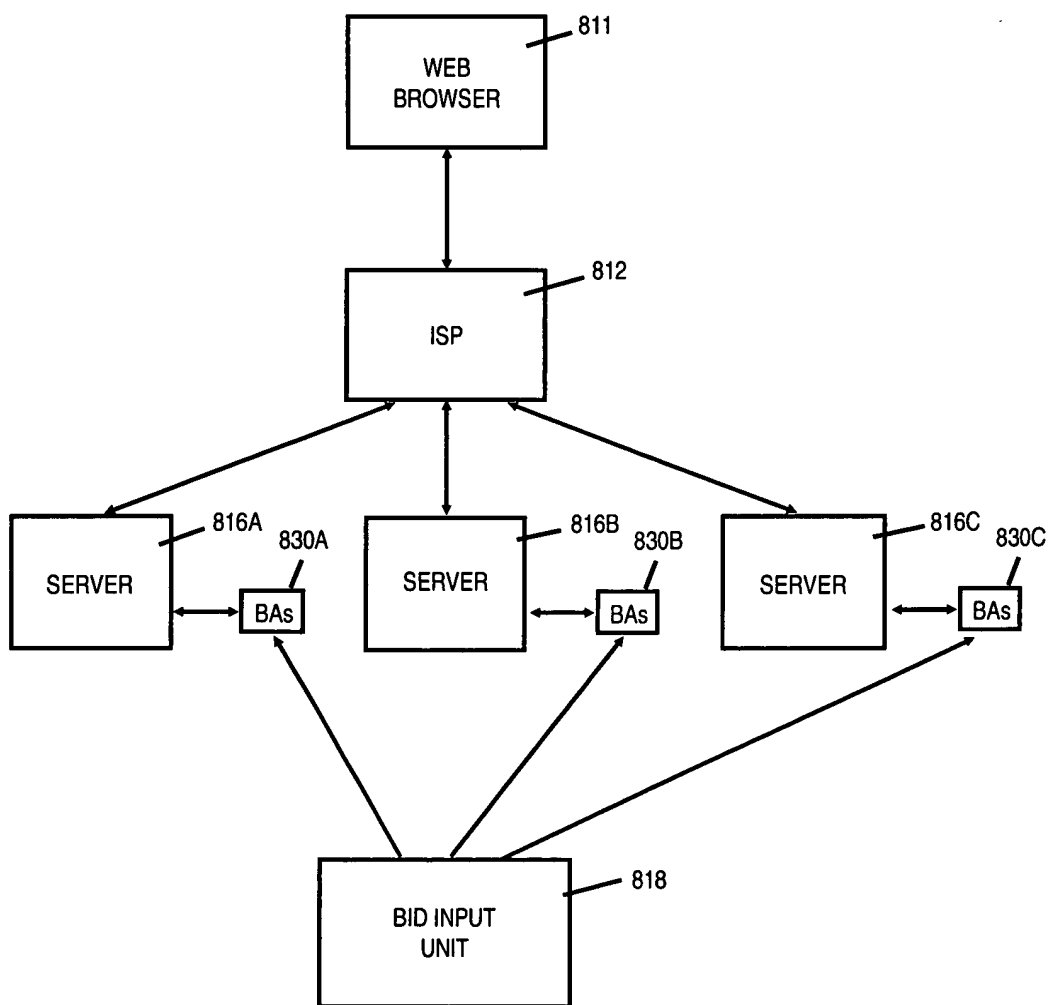
FIG. 7B
(PROCEDURE FOLLOWING INITIALIZATION)

VIEW-OP
ADVERTISEMENT SPACE ──721
BECOMES AVAILABLE

COMPARE VIEW-OP
PROPERTIES TO ──723
BIDS

SELECT HIGHEST ──725
BID

LOOK AT THIS EACH WHERE
ADVERTISEMENT PRESENTED AND ──731
CALCULATE "GOODNESS" IF ALL
VIEW-OPS HAD BEEN TAKEN

SET SCHEDULE CRITERIA FOR ──733
EACH SITE BASED UPON
"GOODNESS" VALUE

DETERMINE
IF VIEW-OP SHOULD BE ──735
TAKEN BASED ON NEW
SELECTION CRITERIA

NO → GO TO NEXT 737
LOWER BID

YES

TAKE VIEW-OP AND ──739
DISPLAY ADVERTISEMENT

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FIG. 8